Chemical/Biological Terrorism
August, 2003

1: Ann N Y Acad Sci. 2003 Jun;990:734-8.
Pathogenic rickettsiae as bioterrorism agents.
Azad AF, Radulovic S.
Department of Microbiology and Immunology, University of Maryland School of Medicine, 655 West Baltimore, Maryland 21201, USA. aazad@umaryland.edu
The diseases caused by rickettsiae vary from mild to severe clinical presentations, with case fatality ranging from none to over 30%. The severity of rickettsial diseases has been associated with age, delayed diagnosis, hepatic and renal dysfunction, central nervous system abnormalities, and pulmonary compromise. Despite the variability in clinical presentations many pathogenic
rickettsiae cause debilitating diseases, any one of which could be used as a potential biological weapon. While Rickettsia prowazekii, R. rickettsii, and Coxiella burnetii pose serious problems and are currently considered bioterrorism agents, several other species could cause havoc once intentionally released into human populations. The complicating factors include misdiagnosis
due to the similarity of rickettsial-induced clinical signs to many commonly occurring infections and subsequent delayed treatment. Vigilance, preparedness, and the availability of efficacious vaccines and antibiotics are required to avert the morbidity and mortality and disturbances generated by the intentional release of pathogenic rickettsiae into large and immunologically naive human populations. This presentation reviews the rickettsial attributes that make them
potential bioterrorism agents, as well as issues related to signs that would alert the responsible authorities, and the preventive measures that could reduce impact of these agents.
PMID: 12860715 [PubMed - indexed for MEDLINE]

2: Ann N Y Acad Sci. 2003 Jun;990:739-42.
Principles of the malicious use of infectious agents to create terror: reasons for concern for organisms of the genus Rickettsia.
Walker DH.
University of Texas Medical Branch, Galveston, Texas 77555-0609, USA. dwalker@utmb.edu
PMID: 12860716 [PubMed - indexed for MEDLINE]

3: Clin Infect Dis. 2003 Aug 1;37(3):467.

Comment on: Clin Infect Dis. 2003 Mar 1;36(5):622-9.
Smallpox vaccination after a bioterrorism-based exposure.
Bicknell WJ, James K.
Publication Types: Comment Letter
PMID: 12884184 [PubMed - indexed for MEDLINE]

4: Commun Dis Public Health. 2003 Jun;6(2):166-8.
Decontamination by fumigation.
Tearle P.
Health Protection Agency, 61 Colindale Avenue, London NW9 5DF.
Since the terrorist attack on the World Trade Centre on September 11th 2001, and the subsequent deliberate release of anthrax spores into the postal system of the USA, NHS hospitals and microbiology pathology laboratories have had to consider how they would respond to a release of a hazardous biological agent. This article looks at the procedure of fumigation of a known contaminated area following spillage or handling of a biological agent, and considers the
additional problems that would occur should areas outside a laboratory, such as hospital wards or ambulances, require fumigation.
PMID: 12889302 [PubMed - indexed for MEDLINE]

5: Croat Med J. 2003 Jun;44(3):336-41.
Laboratory aspects of bioterrorism-related anthrax--from identification tomolecular subtyping to microbial forensics.
Popovic T, Glass M.
Epidemiologic Investigations Laboratory, Meningitis and Special Pathogens Branch, DBMD/NCID/CDC, Mailstop G34, 1600 Clifton Road, Atlanta, GA 30333, USA.
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During the bioterrorism-associated anthrax investigation of 2001 in the United States, 11 patients were diagnosed with inhalational anthrax and 11 more with the cutaneous forms of the disease. Over 125,000 specimens were processed at laboratories of the Laboratory Response Network including those at the Centers for Disease Control and Prevention. Although the 2001 anthrax investigation initially began as a public health investigation, the forensic aspect quickly
became a preeminent component of the investigation. Whereas a public health investigation aims primarily to identify the causative agent and its source, so that appropriate and timely control and preventative measures can be implemented, a forensic investigation goes further to associate the source of the causative agent with a specific individual or group. In addition to
identification and molecular characterization of the causative agents, which are the crucial components of forensic microbiology, there are many other requirements and activities that need to be in place for investigators to successfully complete a forensic investigation. These activities include establishment of quality assurance/quality control criteria and regular
proficiency testing for all laboratories where evidence is analyzed; additional and/or specialized training in handling and processing samples in accordance with forensic microbiology criteria, not only for first responders but also for laboratory and other public health scientists; and establishing and maintaining repositories and databases containing isolates of diverse temporal and
geographic origins to provide a comparative and diverse background for investigators to identify and track the origin and source of such agents.
PMID: 12808729 [PubMed - indexed for MEDLINE]

6: Curr Allergy Asthma Rep. 2003 Jul;3(4):304-10.

Biological warfare from a dermatologic perspective.
Meffert JJ.
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Biological warfare agents have been used in this century by both organized armed forces and terrorist organizations. Beset with many problems that limit their tactical value on the battlefield, such "weapons of mass destruction" have tremendous terror appeal. Unusual presentations or clustering of diseases associated with biowarfare might alert the clinician that an attack has
occurred. The clinical presentations, current recommended treatments, and preventive measures of agents such as anthrax, smallpox, plague, and the viral hemorrhagic fevers are discussed, as well as some of the issues that have been raised as authorities are considering how and when to resume smallpox vaccinations. References focus on current Internet web sites, which will provide
up-to-date information and advice for allergists with immunization questions or who feel they might have encountered a patient with one of these diseases.
Publication Types: Review Review, Tutorial
PMID: 12791207 [PubMed - indexed for MEDLINE]

7: Drug Discov Today. 2003 Aug 15;8(16):740-5.
Preventive and therapeutic approaches to viral agents of bioterrorism.
Bronze MS, Greenfield RA.
Division of Infectious Diseases, University of Oklahoma Health, Sciences Center and the Oklahoma City, Veterans Administration Medical Center, Oklahoma City, USA
Certain viruses, such as those that cause smallpox and hemorrhagic fevers, have been identified as possible bioterrorism agents by the Centers for Disease Control and Prevention. They have been designated as potential threats because large quantities can be propagated in cell culture, they are transmissible as aerosols and, for the most part, there are only limited vaccine and
pharmaceutical strategies for either prevention or treatment of established infection. An additional concern is the potential to genetically modify these agents to enhance virulence or promote resistance to vaccines or identified antivirals. Although the major impact of these agents is human illness, the release of zoonotic agents, such as the Nipah virus, would have consequences for
both humans and animals because infected and noninfected animals might need to be sacrificed to control the spread of infection. Continued research is necessary to develop effective strategies to limit the impact of these biological threats.
PMID: 12944096 [PubMed - in process]

8: Health Aff (Millwood). 2003 Jul-Aug;22(4):241-8.
A prescription for change: the need for qualified physician leadership in public health.
Kahn LH.
Program on Science and Global Security, Woodrow Wilson School of Public and International Affairs, Princeton University, Princeton, New Jersey, USA.
A key element missing in the federal bioterrorism preparedness plan is qualified physician leadership at the local level. Physicians now lead fewer than one-fourth of local health departments. When appointed leaders are not physicians, leadership falls on elected officials or non-medical administrators who become managers of outbreaks. As illustrated in recent case examples, these leaders may find themselves in medical emergencies that they are not qualified
to handle. In serious disease outbreaks, unprepared leadership could contribute to unnecessary illness and death. Here I propose strategies to increase qualified physician leadership in state and local public health infrastructures.
PMID: 12889773 [PubMed - indexed for MEDLINE]

9: Health Aff (Millwood). 2003 Jul-Aug;22(4):230-4.
Leveraging the nation's anti-bioterrorism investments: foundation efforts to ensure a revitalized public health system.
Hearne SA, Segal LM.
Trust for America's Health, Washington, DC, USA.
The emerging potential threats of bioterrorism combined with critical existing epidemics facing the United States call for immediate and urgent attention to the U.S. public health system. The foundation world is helping to answer that call and is sounding the alarm that our health defenses must be able to do "double duty" to protect us from the full spectrum of modern health threats.
This Special Report presents a selective sample of recent and ongoing grant activities designed to revitalize and modernize the public health infrastructure, which is vital to protecting the nation's health and ensuring its safety.
PMID: 12889772 [PubMed - indexed for MEDLINE]

10: Healthc Leadersh Manag Rep. 2003 May;11(5):15.
Why these interesting times shouldn't be ignored.
Pogue JF.
Publication Types: Editorial
PMID: 12858584 [PubMed - indexed for MEDLINE]

11: Healthc Leadersh Manag Rep. 2003 May;11(5):1, 3-5.
Girding for bio-terror on the hospital floor.
Shinkman R.
PMID: 12858582 [PubMed - indexed for MEDLINE]

12: IDrugs. 2003 Aug;6(8):773-80.
Bioterrorism: A new frontier for drug discovery and development.
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Only a few years ago bioterrorism was considered a remote concern but today it has reached the forefront of the public imagination following recent terrorist attacks around the world. The disaster of September 11 2001, followed by anthrax letters sent via the US postal system, and now the renewed tension in the Middle East, have all brought the possibility of bioterrorism a little closer to
reality. A number of biological agents could be used in a terrorist attack, including anthrax, botulinum, plague, smallpox, staphylococcal and streptococcal toxins, and the list of emerging pathogens is evolving rapidly. The serious diseases that these agents produce could cause considerable morbidity and mortality if used in a terrorist attack. This evolving threat presents the
medical, public health and scientific communities with pressing challenges. The present research efforts in academia are primarily focused on the basic research on the pathogens that are considered to be bioweapons for terrorist attack. Thus, collaborative efforts between academic institutes, pharmaceutical industries and governmental agencies are warranted to translate basic research into drugs, vaccines and diagnostic tests. This review provides a brief overview of the threat from biological weapons and the current biodefense strategy to prevent and control outbreaks of diseases caused by intentional release of these bioweapons of mass destruction.
PMID: 12917773 [PubMed - in process]

13: Issue Brief Cent Stud Health Syst Change. 2003 Jul;(65):1-4.
Has bioterrorism preparedness improved public health?
Staiti AB, Katz A, Hoadley JF.
In anticipation of future terrorist attacks, the nation has been focused on emergency preparedness, including threats to public health and the ability of communities to respond to them. The Center for Studying Health System Change's (HSC) recent site visits to 12 nationally representative communities found early benefits to public health due to heightened attention to bioterrorism preparedness: more visibility and credibility for public health, stronger public
health infrastructure and improved communication and coordination across sectors. Modest negative effects included staff diversions and delays in some program implementation. As the site visits continued from fall 2002 into 2003, concerns grew that the federal smallpox vaccination program was diverting resources from such traditional public health activities as routine immunizations, health promotion and screening.
PMID: 12901394 [PubMed - indexed for MEDLINE]

14: J Am Board Fam Pract. 2003 Jul-Aug;16(4):339-342.
Missed Sentinel Case of Naturally Occurring Pneumonic Tularemia Outbreak: Lessons for Detection of Bioterrorism.
Dembek ZF, Buckman RL, Fowler SK, Hadler JL.
Connecticut Department of Public Health, Hartford, and Bolton Family & Sports Medicine, Bolton, Conn.
BACKGROUND: Family physicians are likely to care for patients that have been exposed to diseases associated with bioterrorism. Persons with seemingly nondescript initial disease symptoms could be harbingers of a larger outbreak, whether naturally occurring or purposefully created. METHODS: We report a missed sentinel case of pneumonic tularemia associated with a naturally occurring outbreak. The patient's initial clinical symptoms and signs were nondescript,
and the diagnosis was recognized by subsequent blood tests. The medical literature was searched using the key words "tularemia," "bioterrorism," "index of suspicion," and "sentinel case." Results and CONCLUSIONS: Being alert to possible unexpected causes of a pneumonic summer illness in a patient with associated weight loss might have led to an earlier diagnosis of this sentinel case tularemia and its association with the subsequent outbreak. Individual
patients are likely to visit a physician's office after a purposeful bioterrorism event. Greater efforts must be made to increase awareness in all primary care physicians who might see patients exposed to a bioterrorism illness.
PMID: 12949036 [PubMed - as supplied by publisher]

15: J Healthc Inf Manag. 2003 Summer;17(3):28-30.
The role of technology in biodefense.
Krohn R.
rikrone@aol.com
PMID: 12858593 [PubMed - indexed for MEDLINE]

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Agroterrorism.
Lutz BD, Greenfield RA.
PMID: 12858816 [PubMed - indexed for MEDLINE]

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Bioterrorism and biological warfare: not only a respiratory affair.

Fasano A.
Publication Types: News
PMID: 12669708 [PubMed - indexed for MEDLINE]

18: J R Army Med Corps. 2003 Jun;149(2):125-30.
Bioterrorism: preparing for the unthinkable.
Alexander DA.
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Terrorism is not a new concept but our need to prepare for the effects of bioterrorism has achieved a particular urgency. The use of biological agents provides a new set of challenges to professional caregivers, emergency personnel and Governments. These agents are generally not readily identified through the senses, have delayed effects and have the power to generate fear and panic. They are also intended to demonstrate that Governments and other organisations are not able to protect their citizens and members. What evidence there is suggests bioterrorist incidents have the potential to create higher levels of psychopathology than physical injury. Therefore, the authorities must identify and rehearse suitable methods of psychoprophylaxis and intervention.
PMID: 12929520 [PubMed - in process]

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Influenza as a bioweapon.
Madjid M, Lillibridge S, Mirhaji P, Casscells W.
School of Medicine, Center for Biosecurity and Public Health, University of Texas-Houston Health Center, Houston, Texas, USA.
Publication Types: Review Review, Tutorial
PMID: 12835448 [PubMed - indexed for MEDLINE]

20: JAMA. 2003 Aug 6;290(5):659-62.
Clinical manifestations of sarin nerve gas exposure.
Lee EC.
Harvard Medical School, Boston, Mass 02215, USA. elee@hsph.harvard.edu
Publication Types: Historical Article Review Review, Tutorial
PMID: 12902371 [PubMed - indexed for MEDLINE]

21: JAMA. 2003 Aug 6;290(5):598-9.
Bronchiolitis obliterans in a survivor of a chemical weapons attack.
Thomason JW, Rice TW, Milstone AP.
Publication Types: Letter
PMID: 12902361 [PubMed - indexed for MEDLINE]

22: Lancet Neurol. 2003 May;2(5):268.
Take your pyridostigmine: that's an (ethical?) order!
Burton A.
Publication Types: News
PMID: 12849173 [PubMed - indexed for MEDLINE]

23: MLO Med Lab Obs. 2003 Aug;35(8):12-7, 19; quiz 22-3.
Sentinel bioterrorism responders: are hospital labs ready?
York M.
PMID: 12942658 [PubMed - in process]

24: Nat Med. 2003 Jul;9(7):805.
Backyard biodefense rouses extreme reactions.
Diamond B.
Publication Types: News
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25: Pac Health Dialog. 2002 Mar;9(1):109-14.
The National Pharmaceutical Stockpile Program: an overview and perspective for the Pacific Islands.
Pesik N, Gorman S, Williams WD.
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The National Pharmaceutical Stockpile (NSP) program was created as a national resource and is an essential response component of the Centers for Disease Control and Prevention's (CDC's) larger Bioterrorism Preparedness and Response Initiative. The role of the NPS program is to maintain a national repository of life-saving pharmaceuticals and medical supplies that can be delivered to communities in the event of a biological or chemical terrorist attack or an
event involving mass casualties. The NPS is to be a re-supply and backup mechanism to state and local emergency response. Before a decision is made to deploy NPS assets, CDC will collaborate with local, state, and federal officials to determine the nature and extent of the event. Once the federal decision to deploy NPS assets is made, CDC's NPS program will arrange for delivery of assets to reach the affected area within 12 hours.
Publication Types: Review Review, Tutorial
PMID: 12737427 [PubMed - indexed for MEDLINE]

26: Pharmacoepidemiol Drug Saf. 2003 Apr-May;12(3):177-82.
Increased US prescription trends associated with the CDC Bacillus anthracis antimicrobial postexposure prophylaxis campaign.
Shaffer D, Armstrong G, Higgins K, Honig P, Coyne P, Boxwell D, Beitz J, Leissa B, Murphy D.
Center for Drug Evaluation and Research, US Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, USA.
PURPOSE: We evaluated national outpatient antimicrobial prescription trends in relation to the first United States case of inhalational anthrax due to the intentional delivery of Bacillus anthracis (B. anthracis) spores. METHODS: We queried IMS HEALTH's National Prescription Audit Plus7 database for two 6-month periods (July-December) in 2001 and 2000 to describe outpatient prescription trends of antimicrobials recommended during the Centers for Disease Control and Prevention's (CDC) postexposure prophylaxis campaign. RESULTS: Overall, antimicrobial utilization for the referent 6-month time frame was greater in 2000 compared to 2001. In contrast, ciprofloxacin utilization was greater in 2001 during October, the month following the index case, increasing by more than 40% over utilization in October 2000. Similarly, doxycycline utilization
increased by 30% during October/November. This corresponded to relative increases in US utilization for ciprofloxacin of approximately 160,000 prescriptions for the month of October and for doxycycline of approximately 96,000 prescriptions during October and 120,000 prescriptions for November. CONCLUSIONS: We conclude more widespread prescribing of ciprofloxacin and
doxycycline occurred in response to the first US bioterrorist-associated anthrax attacks than was warranted based upon confirmed or suspected B. anthracis exposure alone.

PMID: 12733470 [PubMed - indexed for MEDLINE]